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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/743,432

12/23/2003

Kaoru Yamaki

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EXAMINER

MCNELIS, KATHLEEN A

ART UNIT

PAPER NUMBER

1742

NOTIFICATION DATE

DELIVERY MODE

08/08/2007

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/743,432	Applicant(s) YAMAKI ET AL.	
	Examiner Kathleen A. McNelis	Art Unit 1742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 08 June 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-23 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20-23 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

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Claims Status

Claims 20-23 remain for examination wherein claim 20 is amended and claims 22 and 23 are new.

Status of Previous Rejections

The following rejection is maintained:

Claims 20 and 21 under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) and WO 99/16641 (based on U.S. Pat. Family member Fukabori et al. 6,878,352).

DETAILED ACTION

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 20-23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fukabori et al. (U.S. Pat. No. 5,849,062) in view of Morey (U.S. Pat. No. 4,362,276) and WO 99/16641 (based on U.S. Pat. Family member Fukabori et al. 6,878,352).

Fukabori et al. in view of Morey and WO '641 is applied as discussed in the 03/15/2007 Office action.

Regarding the amended limitation to claim 20 that the temperature is maintained for about 3 times or more of a time required to thermally treat the inflators, and claim 22 of a time for at least about 3 to 30 times and claim 23 of a time no longer than 100 times, although Fukabori et al. in view of Morey and WO '641 does not specifically recite these time requirements, the principles of heat transfer and process safety were well known in the art at the time the invention was made.

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In Fukabori et al. inflators are charged to a furnace for heating (col. 2 lines 50-60). Since no mention is made of controlling the temperature of the inflators prior to charging, one of ordinary skill in the art would assume that they could be charged at whatever ambient temperature conditions prevail at the time. Further, Fukabori et al. in view of Morey and WO '641 discloses that the activation temperature of the chemical is normally from 300 to 600 °C and discloses heating to such temperature as discussed in the 03/15/2007 Office action. Obviously, time will be required to heat the inflators from ambient temperature to the temperature where reaction will occur. Such time can be predicted by well-known correlations for heat transfer or by routine experimentation. Further, such time will depend on factors such as the number, size and temperature of inflators charged as well as temperature inside the furnace at the time of charging and flame temperature. Therefore it would have been obvious to one of ordinary skill in the art at the time the invention was made to optimize the retention time for cylinders in the furnace to provide sufficient time for heating of the cylinders to the desired temperature and for heat transfer through the cylinders to react the chemical (see M.P.E.P 2144.05, II, B).

Further, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide additional time as a safety factor to allow for potential changes in operation, such as charging more inflators or inflators at a lower ambient temperature which would affect the time required for sufficient heating to react the chemical. The determination of additional time desired to allow for potential changes and to provide a desired margin of safety could have been made by one of ordinary skill in the art using either well-known correlations for heat transfer or by routine experimentation. Therefore lacking evidence of the criticality of the time of greater than 3X (claim 20) or between 3X and 22X (claim 22) or no more than 100X (claim 23), examiner's position is that providing sufficient time at temperature for heating the

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cylinders before initiation of treatment can begin and to provide a safety margin desired for possible changes in operation would have been a matter of routine estimation and/or experimentation and obvious to one of ordinary skill in the art at the time the invention was made.

Additional Citations

The following prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Perry's Chemical Engineers' Handbook, Seventh edition, Section 5 discloses correlations for estimating heat transfer by conduction, convection and radiation mechanisms (p. 5-8), and teaches that conductive (e.g. equation 5-1), convective (e.g. equation 5-35) and radiative (e.g. equation 5-112) heat transfer mechanisms are functions of time. Further, Perry's teaches that the heat transfer rate can be estimated in combustion chambers can be estimated by various methods (pp. 5-40 to 5-42).

Hendershot (1997) teaches that procedural controls are a known means of managing process risk as part of safer chemical process design.

Response to Arguments

Applicant's arguments filed 06/08/2007 have been fully considered but they are not persuasive.

Arguments are based on the combination of Fukabori '062 in view of Morey and WO '641 failing to disclose or suggest: "maintaining the temperature at least about 3 times or more of a time required to thermally treat the inflators".

Examiner has addressed the amendment to claim 20 above in the grounds of rejection.

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Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kathleen A. McNelis whose telephone number is 571 272 3554. The examiner can normally be reached on M-F 8:00 AM to 4:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on 571-272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR

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system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

KAM

08/02/2007

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